Remarks

Entry of the above-noted amendments, reconsideration of the application, and allowance of all claims pending are respectfully requested. By this amendment, claims 1, 2, 4 and 8 are amended, and claims 9-13 are added. These amendments to the claims constitute a bona fide attempt by applicant to advance prosecution of the application and obtain allowance of certain claims, and are in no way meant to acquiesce to the substance of the rejections. Support for the amendments can be found throughout the specification (e.g., paragraph 0015, figures (e.g FIG. 2), and claims. Claims 1-13 are pending.

Claim Rejections - 35 U.S.C. § 103

The Rejection of Claims 1-6 and 8

Claims 1-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns et al. This rejection is respectfully, but most strenuously, traversed.

Applicants respectfully submit that the Office Action's citations to the applied reference, with or without modification or combination, assuming, *arguendo*, that the modification or combination of the Office Action's citation to the applied reference is proper, does not teach or suggest one or more elements of the claimed invention, as further discussed below.

For explanatory purposes, applicants discuss herein one or more differences between the Office Action's citation to the applied reference and the claimed invention with reference to one or more parts of the applied reference. This discussion, however, is in no way meant to acquiesce in any characterization that one or more parts of the Office Action's citation to the applied reference corresponds to the claimed invention.

Applicants respectfully submit that the Office Action's citation to the applied reference does not teach or suggest one or more elements of the claimed invention. A careful reading of

the Office Action's citation to the applied reference fails to teach or suggest, for example, an inductor coupled in series with each of the resistive load elements, such that the inductors are coupled to each other by mutual inductance, as recited in applicants' independent claim 1, a differential pair of transistors having emitters coupled together; a load resistor coupled to a collector of each transistor; and an inductor coupled in series with each of the load resistors, where the inductors are magnetically coupled together, as recited in applicants' independent claim 3 or connecting an inductor in series with each of the resistive load elements and magnetically coupling the inductors together as recited in applicants' independent claim 8.

Burns et al. (column 4, lines 42-47) discloses, with respect to Fig. 6, discrete, unrelated load inductors:

> FIG. 6 illustrates an example of amplifier circuit assembly 302 and representative amplifier circuit assembly 401. FIG. 6 depicts a typical integrated circuit 602 as comprising a differential pair 604, a first load inductor 606, a first load resistor 610, a second load inductor 608, and a second load resistor 612.

No mention is made of any interaction between the load inductors, let alone a magnetic or mutual coupling.

Burns et al. (column 4, lines 58-62) discloses, with respect to Fig. 7, discrete, unrelated load inductors:

> FIG. 7 expands on FIG. 4A and FIG. 4C and illustrates an integrated circuit connected according to an embodiment of the present invention. Amplifier circuit assembly 302;401 is comprised of on-chip resistors and inductors (shown as R1, R2, L1, and L2 in FIG. 7)...

Again, no mention is made of any interaction between the load inductors, let alone a magnetic or mutual coupling.

Burns et al. (column 5, lines 49-53) discloses, with respect to Fig. 9A, discrete, unrelated load inductors:

> In FIG. 9A, a circuit is shown for the example wherein the ferrite beads have a minimum inductance of 1 .mu.H and the on-chip spiral inductors have a value of 10 nH with a total series resistance of 50 .OMEGA..

Again, no mention is made of any interaction between the load inductors, let alone a magnetic or mutual coupling.

Burns et al. discloses discrete, unrelated load inductors. The Office Action's citation to Burns et al. fails to disclose magnetic or mutual coupling. Simply missing from the Office Action's citation to Burns et al. is any mention of inductors which are coupled to each other by mutual inductance, as recited in applicants' independent claim 1, or inductors which are magnetically coupled together, as recited in applicants' independent claim 3 or magnetically coupling the inductors together as recited in applicants' independent claim 8.

The Office Action recites

> Since the inductors may be spiral type and implemented on the same chip (fig. 9A) they will inherently be coupled by mutual inductance because of their close proximity.

Simply missing from Fig. 9A and the specification of Burns et al. is any mention of proximity of inductors sufficient to create mutual coupling, magnetic coupling or the like. Implementing spiral inductors on the same chip does not mean that the inductors are coupled together. So, the Office Action's citation to Burns et al. fails to satisfy at least one of the limitations recited in applicants' independent claims 1, 3 and 8.

For all the reasons presented above with reference to claims 1, 3 and 8, it is believed that these claims are neither anticipated nor obvious over the art of record. The corresponding

dependent claims are believed allowable for the same reasons as independent claim 1, as well as for their own additional characterizations.

Withdrawal of the §103 rejection is therefore respectfully requested.

The Rejection of Claim 7

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burns et al in view of Brown. This rejection is respectfully, but most strenuously, traversed.

Applicants respectfully submit that the Office Action's citations to the applied references, with or without modification or combination, assuming, *arguendo*, that the modification or combination of the Office Action's citations to the applied references is proper, do not teach or suggest one or more elements of the claimed invention, as further discussed below.

For explanatory purposes, applicants discuss herein one or more differences between the Office Action's citations to the applied references and the claimed invention with reference to one or more parts of the applied references. This discussion, however, is in no way meant to acquiesce in any characterization that one or more parts of the Office Action's citations to the applied references correspond to the claimed invention.

Applicants respectfully submit that the Office Action's citations to the applied references do not teach or suggest one or more elements of the claimed invention. A careful reading of the Office Action's citations to the applied references fails to teach or suggest, for example, a differential pair of transistors having emitters coupled together; a load resistor coupled to a collector of each transistor; and an inductor coupled in series with each of the load resistors, where the inductors are magnetically coupled together., as recited in applicants' independent claim 3, from which claim 7 depends.

As pointed out above, Burns et al. discloses discrete, unrelated load inductors. The Office Action's citation to Burns et al. fails to disclose magnetic or mutual coupling. Simply missing from the Office Action's citation to Burns et al. is any mention of inductors which are magnetically coupled together, as recited in applicants' independent claim 3.

So, the Office Action's citation to Burns et al. fails to satisfy at least one of the limitations recited in applicants' independent claim 3.

The shortcomings of the Office Action's citation to Burns et al. relative to certain elements of the claimed invention have been discussed above. The Office Action proposes a combination of the citation to Burns et al. with a citation to Brown. However, the Office Action's citation to Brown does not overcome the deficiency of the Office Action's citation to Burns et al. Applicants respectfully submit that the proposed combination of the Office Action's citation to Burns et al. with the Office Action's citation to Brown fails to provide the required approach, assuming, *arguendo*, that the combination of the Office Action's citation to Burns et al. with the Office Action's citation to Brown is proper.

Brown (Column 12, lines), with reference to Fig. 16, discloses inductors 933, 934:

> Each of the transconductance amplifiers 901, 902 includes a tuning amplifier 911, a transadmittance amplifier 912 and a translinear amplifier 913 which are cascaded between a terminal 227 of supply voltage Vcc (e.g., +5 V) and the ground terminal via transistors 915, 916. The tuning amplifier 911 has non-inverting and inverting input terminals 917 and 918 which are connected to the collectors of transistors 919, 920 and 921, 922, respectively. The emitters of the transistors 919, 921 are connected to the collector of a transistor 923, the emitter of which is connected to the ground terminal via a resistor 924. The emitters of the transistors 920, 922 are connected to the emitter of a transistor 925, the emitter of which is connected to the ground terminal via a resistor 926. The bases of the transistors 919, 922 and 921, 920 are connected to the emitter of transistors 927 and 928, respectively, of the translinear amplifier 913. The emitters of the transistors 927, 928 are connected to the bases of transistors 929, 930, the emitters

> of which are connected to the ground terminal via a resistor 931. The bases of the transistors 927, 928 are connected to a bias input terminal 932 of bias voltage Vb3. The collectors of the transistors 927, 928 are connected to the Vcc voltage terminal. **The collectors of the transistors 929, 930 are connected to the voltage terminal via inductors 933, 934, respectively.** The collectors of the transistors 929 and 930 are noninverting and inverting output terminals OP and ON of the transconductance amplifiers 901 and 902 of FIG. 15. (emphasis added)

Brown discloses discrete, unrelated inductors for connecting the transistor collectors. The Office Action's citation to Brown fails to disclose magnetic or mutual coupling or the like. Simply missing from the Office Action's citation to Brown is any mention of inductors which are magnetically coupled together, as recited in applicants' independent claim 3.

So, the Office Action's citation to Brown fails to satisfy at least one of the limitations recited in applicants' independent claim 3.

The Office Action's citations to Burns et al. and Brown both fail to meet at least one of applicants' claimed features. For example, there is no teaching or suggestion in the Office Action's citations to Burns et al. or Brown of a differential pair of transistors having emitters coupled together; a load resistor coupled to a collector of each transistor; and an inductor coupled in series with each of the load resistors, where the inductors are magnetically coupled together. as recited in applicants' independent claim 3.

Furthermore, the Office Action does not allege that the art of record provides any teaching, suggestion, or incentive for modifying the citations to Burns et al. and/or Brown to provide the claimed configuration. For all the reasons presented above with reference to claim 3, claim 3 is believed neither anticipated nor obvious over the art of record. The corresponding dependent claim 7 is believed allowable for the same reasons as independent claim 3, as well as for its own additional characterizations.

Withdrawal of the §103 rejection is therefore respectfully requested.

NGC-190/000418-804 US

In view of the above amendments and remarks, allowance of all claims pending is respectfully requested. If a telephone conference would be of assistance in advancing the prosecution of this application, the Examiner is invited to call applicant's attorney.

Respectfully submitted,

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